

**In the Claims:**

Please cancel without prejudice claims 1 to 13 and add the following claims 14 to 30:

*X1*  
Claims 1 to 13 (canceled).

14(new). A method for transmitting signals between a first radio station (1) and a second radio station (2), in which a pre-equalization of radio signals to be transmitted is performed in a modulator (4) of said first radio station and resulting pre-equalized signals are transmitted over a plurality of radio channels (20,25) from the first radio station (1) to the second radio station (2), said method comprising the steps of:

- a) receiving a respective pre-equalized signal propagated from said first radio station (1) over each of said radio channels (20,25) with a plurality of antennas (60,65) of said second radio station (2);
- b) determining an estimate of a total impulse response of all of said radio channels (20,25) in said first radio station (1); and
- c) performing said pre-equalization of said signals propagated by said first radio station in said modulator (4) according to said estimate of said total impulse response determined in step b).

15(new). The method as defined in claim 14, wherein received signals received by said antennas (60,65) of said second radio station (2) are combined linearly and subsequently input to a demodulator for demodulation.

16(new). The method as defined in claim 15, further comprising transmitting a respective reference signal from said antennas (60,65) of said second radio station (2) over each of said radio channels (20,25) to said first radio station (1) and wherein said estimate of said total impulse response is derived from superimposed reference signals received in said first radio station (1).

*AM*  
17(new). The method as defined in claim 16, wherein said respective reference signal is multiplied with a corresponding coefficient depending on which of said radio channels (20,25) is employed in transmitting said reference signal and said corresponding received reference signal is multiplied with said corresponding coefficient of said radio channel employed for transmitting said reference signal.

18(new). The method as defined in claim 14, further comprising transmitting additional radio signals between said first radio station (1) or said second radio station (2) and additional radio stations (3), and wherein data transmitted with said signals from different radio stations are widened with different codes and said pre-equalization is performed in said modulator (4) of said first radio station (1) according to all of said different codes and transmission properties of all of said radio channels.

19(new). The method as defined in claim 18, wherein said transmission properties of said radio channels are determined from transmitted data transmitted to the first radio station (1) from the second radio station (2) and said additional radio stations (3).

20(new). A radio station (2) comprising  
at least two antennas (60,65) for receiving and transmitting radio signals transmitted over corresponding radio channels (20,25);

means for multiplying respective received signals from said at least two antennas with corresponding coefficients (c1, c2) to form weighted received signals;

*Al*  
means for adding said weighted received signals to form a resulting linear combination;

means for selecting said corresponding coefficients (c1,c2) so that said coefficients (c1, c2) correspond to other coefficients with which estimated impulse responses of said radio channels (20,25) are combined linearly in a transmitting radio station (1) to make an estimate of a total impulse response for pre-equalization of transmitted signals; and

means for inputting said resulting linear combination to a demodulator.

21(new). A radio station (1) comprising  
means for transmitting a pre-equalized signal to a receiving radio station (2);

means for performing an estimate of a total impulse response of plural radio channels (20,25) used for signal transmission to said receiving radio station (2); and

a modulator (4) comprising means for pre-equalization of propagated signals transmitted to said receiving radio station (2) and wherein said means for pre-equalization performs said pre-equalization according to said estimate of said total impulse response.

22(new). A method for transmitting signals between a first radio station (1) and a second radio station (2), in which a pre-equalization of signals to be transmitted is performed in a modulator (4) of said first radio station and resulting pre-equalized signals are transmitted over radio channels (20,25) from the first radio station (1) to the second radio station (2), said method comprising the steps of:

- Al*
- a) transmitting signals over additional radio channels between the first radio station (1) or the second radio station (2) and other radio stations (3);
  - b) widening data transmitted with said signals of different radio stations with different codes; and
  - c) performing said pre-equalization in said modulator (4) of said first radio station according to all of said different codes and according to transmission properties of all of said radio channels.

23(new). The method as defined in claim 22, wherein said resulting pre-equalized signals are propagated from plural antennas (50,55) of the first radio

station (1) and transmitted over said radio channels (20,25) to the second radio station (2), an estimate of an impulse response of each of said radio channels (20,25) is ascertained in the first radio station (1) and said pre-equalization of said signals propagated from said plural antennas (50,55) is performed according to said estimate of said impulse response.

A |  
24(new). The method as defined in claim 23, wherein a respective reference signal is transmitted to said first radio station (1) from a corresponding antenna (60) of said second radio station (2) over each of said radio channels (20,25) and said estimate of said impulse response of each of said radio channels (20,25) is derived from reception of said respective reference signal transmitted over each of said radio channels (20,25) to said first radio station.

25(new). The method as defined in claim 23, wherein said resulting pre-equalized signals propagated by the first radio station (1) are transmitted over said radio channels (20,25) and received by corresponding antennas (60,65) of said second radio station (2), an estimate of a total impulse response of all of said radio channels (20,25) is ascertained in said first radio station (1), said pre-equalization of said signals propagated by said first radio station (1) is performed according to said estimate of said total impulse response, and received signals received by said corresponding antennas (60,65) of said second radio station (2) are combined linearly and subsequently input to a demodulator.

26(new). The method as defined in claim 25, wherein respective reference signals are transmitted to the first radio station (1) over said radio channels (20,25) and received by said corresponding antennas (60,65) of the second radio station (2) and said estimate of said total impulse response is derived from superimposed reception of said reference signals in said first radio station (1).

27(new). The method as defined in claim 26, wherein said respective reference signals are multiplied by corresponding coefficients according which of said radio channels is used for transmission of said reference signals and wherein received signals received by said corresponding antennas (60,65) of said second radio station (2) are multiplied by said corresponding coefficients and then linearly combined with each other.

A1

28(new). The method as defined in claim 22, wherein said transmission properties of said radio channels are ascertained from data transmissions of the second radio station (2) and the additional radio stations (2) to the first radio station.

29(new). A radio station (1) comprising  
at least two antennas (50,55) from which pre-equalized signals are propagated over respective radio channels (20,25) to an additional radio station (2);

a code generator (5) for widening data transmitted with the pre-equalized signals with a respective code, said code generator ascertaining said respective code according to a selected radio link; and

a modulator (4) including means for pre-equalization of radio signals to be transmitted to form the pre-equalized signals;

wherein said means for pre-equalization of said radio signals to be transmitted from said at least two antennas (50, 55) performs said pre-equalization according to all actually used codes and transmission properties of all actually used ones of said radio channels (20,25).

30(new). The radio station as defined in claim 29, further comprising at least one channel estimator (11,12) and wherein said at least one channel estimator comprising means for determining an estimate of an impulse response of each of said radio channels (20,25) and said pre-equalization of said radio signals to be transmitted from said at least two antennas occurs according to said estimate for each of said radio channels.